Dr. Edwd Jenner

The

Vaccine Pustule

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ON THE

VARIETIES AND MODIFICATIONS

OF

THE VACCINE PUSTULÆ,

OCCASIONED BY AN

HERPETIC STATE OF THE SKIN.

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Cheltenham,

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THE following Paper was published in the Medical and Physical Journal, for August, 1804, No. 66. Conceiving the information it contains to be of considerable importance, and that it has not been very generally circulated, I have thought proper to reprint it. Since writing it, my inquiries into this interesting subject have become much more extensive: the result I hope shortly to lay before the public. I shall here just observe, that the most ample testimonies now lie before me, supporting my opinion, that the herpetic and some other irritative eruptions are capable of rendering variolous inoculation imperfect, as well as the Vaccine.

E. J.

BERKELEY, 18*th March*, 1806.

ON

THE MODIFICATIONS

OF

THE VACCINE PUSTULE.

THOSE herpetic affections which so frequently appear among Children, particularly of the lower orders of society, and which are evidently contagious, often prevent the vaccine virus from producing its correct action. The skin, although apparently sound at the point of insertion, is, nevertheless, sometimes found to be so influenced by the disease as to baffle all our efforts to produce a pustule sufficiently perfect to secure the constitution from the contagion of the Small Pox. The scaly tetter, and those affections described by the ingenious Dr. Willan, under the term PSORIASIS,* in his elaborate and valuable Treatise on Cutaneous Diseases, are capable, as well as these vesicular eruptions which so soon terminate in a soft scab, of producing similar interruptions to the perfect progress of the vac-

* Order 2d.

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cine pustule,* which, under these circumstances, is apt to partake more or less of the herpetic character. Various parts of the face, particularly the angles of the lips, and that portion of the upper lip which terminates in the nostrils, the edges of the eye-lids, the tender skin behind the ears, the scalp, and the back of the neck, are most subject to the malady; but when any part of the head becomes affected with herpetic blotches, we commonly see eruptions, sooner or later, dispersed over different parts of the skin. As far as I have been able to observe, it is more common among the lower classes of society in the country than in London. It is not uncommon to see it pass through a village school, assuming a variety of characters, according to the state of the constitution of the child affected with it. I do not mean to say that the pustule is always imperfect, and not effective, when the inoculated patient has this malady; on the contrary, it sometimes goes through its course correctly; and, I think, more frequently so when this affection of the skin has been of long standing, than when of short duration; but what is remarkable, in either case, the disease is often quickly subdued by the vaccine influence on the constitution.† I have noticed this impediment to the perfect formation and progress of the vaccine pustule in my general

* Having in my former treatises used the term *pustule*, I apply it now, though, perhaps, not so appropriate as the term *pock* or *vesicle*. But changing it might create confusion.

† Vaccination on an herpetic skin produces every gradation in the state of the pustule, from that slight deviation from perfection, which is quite immaterial, up to that point which affords no security at all.

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correspondence for more than two years past,* conceiving it to be a more frequent source of the spurious pustule than any other, or, indeed, than all the rest united. Dr. Marcet inserted some hints I communicated to him, on this head, in the Medical Journal, for May, 1803; but, I believe, they have not been much attended to.

In my Paper of Instructions for Vaccine Inoculation, published some years since, I have endeavoured to guard the Inoculator from being deceived by false appearances, by the following observations:—

"The vaccine fluid is liable, from causes apparently trifling, to undergo a decomposition. In this state it sometimes produces what has been denominated the spurious pustule; that is, a pustule, or an appearance on the arm not possessing the characteristic marks of the genuine pustule. Anomalies assuming different forms may be excited, according to the qualities of the virus applied, or the state of the person inoculated; but by far the most frequent variety or deviation from the perfect pustule is that which arrives at maturity, and finishes its progress much within the time limited by the true. Its commencement is marked by a troublesome itching; and it throws out a premature efflorescence, sometimes extensive, but seldom circumscribed, or of so vivid a tint as that which surrounds the pustule completely organized; and (which is more characteristic of its degeneracy than the other symptoms) it appears more like a common

* This was written in the summer of 1804.

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festering produced by a thorn, or any other small extraneous body, sticking in the skin, than a pustule excited by the vaccine virus. It is generally of a straw colour, and, when punctured, instead of the colourless, transparent fluid of a perfect pustule, its contents are found to be opaque. A little practice in vaccine inoculation, attentively conducted, impresses on the mind the perfect character of the vaccine pustule; therefore, when a deviation arises, of whatever kind it may be, common prudence points out the necessity of re-inoculation." The deviation, when it arises from the cuticular disease I am speaking of, generally corresponds with that above recited. I might have added, that if the pustule is not much disturbed in its course by scratching, it commonly terminates in a scab of a pale brown or amber colour, and soft in its texture, compared with that produced by the true vaccine pustule. I have abundant testimony to prove that the fluid taken from a spurious vaccine pustule, thus excited, is capable of propagating and perpetuating its like. Indeed, the vaccine fluid, even in a pustule going through its course perfectly, if taken in its far-advanced stages, is capable of producing varieties, which will be permanent, if we continue to vaccinate with it. I mention the subject briefly now; but it is my intention (as it embraces a wide field) to enlarge upon it, and some others connected with vaccination, when circumstances will permit me. Medical practitioners should be particularly circumspect when they inoculate those who have cuticular diseases; but the danger of insecurity would be at once obviated, if, on the appearance of an irregular pustule, the dis-

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ease were to be subdued by proper applications, and the patient then re-inoculated. I shall select a case, to show the efficacy of this mode of proceeding.

A family, of the name of Haselton, consisting of five fine healthy-looking children, were inoculated by me at Cheltenham, in the autumn of 1803, with fluid virus taken immediately from a proper vaccine pustule. On examining the punctures on the fifth day, I found, that on the left arm of one of the children, the pustule was advancing too rapidly. It was of an irregular form, contained already an opaque fluid, and was surrounded by an efflorescence of a dusky red colour, to the extent of one third part of an inch. Such an intolerable itching was excited, that the boy (who was only three years old) could not be prevented from rubbing it. This appearance led me to an examination, and on the child's head I observed an herpetic blotch, not much larger in circumference than a shilling. The hair around the part was stiffened by the concreted ichor oozing from the sore, which had made its appearance about ten days. No eruption shewed itself in any other part of the body. The pustule was repeatedly broken by the child's scratching and rubbing it; and the inflammation on the arm, which began to spread so early, on the eighth and ninth days became very extensive. The child, at the same time, was hot and restless.* A

* When these deviations appear, the system becomes more affected than when the vaccine pustule is correct.

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soft, amber-coloured scab * now began to form; but this being rubbed off, the part ulcerated and healed slowly, leaving a cicatrix deeper and larger than in ordinary cases. The disease on the scalp was now quickly subdued by the use of tar ointment; and, at the expiration of six weeks from its commencement, the inoculation was repeated, when a pustule formed, which went through all its proper stages with perfect regularity. The rest of the children, inoculated at the same time, went through the Cow Pox in the ordinary way, without any irregular appearance.

I have selected this case, to shew how slight a local appearance may produce a change in the state of the skin, at a distance from it. I cannot call it a general change in every case, as I have sometimes found a correct pustule on one arm, and a spurious pustule on the other; indeed, I have sometimes found the perfect and imperfect pustule on the same arm within two inches of each other, when the virus inserted was taken the same instant from the same perfect pustule. It happens that I more frequently detect the disease by the appearance of the arm, than previously to inoculation. In this instance parental fondness is often mismanaged, and induces mothers to conceal eruptive complaints on their children, although closely questioned on the subject.

* It may be remarked, that purulent matter cannot form a scab so hard and compact as limpid matter. Hence arises the difference between the variolous and the vaccine scab. It accounts, too, for the varicellous scab being commonly harder than the variolous.

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These are the constitutions which sometimes shew a few wandering pustulous eruptions * after vaccine inoculation; and so peculiarly irritable is the skin, when influenced by herpes, that the smallest wound, a slight scratch, or the pricking of a pin, for example, commonly produces inflammation, and slight, superficial suppuration.

The preceding year I inoculated another child at Cheltenham, Patience Reeks, whose face was involved in one general thick incrustation. She had been in this state, without any material variation, upwards of two years, during which time applications had been used to no purpose. The scalp partook in some degree of the same kind of disease; but the body and limbs were free from it, except when any of the acrid fluid, oozing from fissures in the crust, chanced to fall on the neck or breast; *it then* invariably produced, for a time, spots of a similar appearance. On vaccinating this child by a single puncture in each arm, the pustules went through their course correctly. On their decline, the incrustation began to be less coherent, and to drop off; and at the expiration of a fortnight, the face was smooth, no vestige of the disease remaining, except a slight inflammation of the eye-lids.

Cases of this sort have become familiar; Mr. Ring has given several in his very copious Treatise on the Cow Pox; and they have been mentioned by other authors, both here and on the continent.

I have, in like manner, sometimes seen papulous eruptions, which have long proved troublesome, speedily swept away.

* Herpetic varieties.

This, I think, may be accounted for. The vaccine virus, a few days after its insertion, begins to act upon the constitution. It is then manifest, from a new appearance which these eruptions put on, commonly that of increased inflammation, that a new action has been excited in them. The original morbid action, therefore, becomes deranged, and is destroyed, and consequently the disease is conquered. I have seen many instances where pre-existing pimples and vesicles have been converted into vaccine pocks, which have kept pace with those on the arms in their progressive changes, and have afforded as perfect vaccine virus.

Seeing that the skin, when disposed to reject the ordinary action of variolous virus, rejects the vaccine also, I shall just observe, it occurs to me as probable, that its herpetic state, at the time of inoculation, has been the chief source of those failures, which many practitioners have witnessed in inoculating for the small-pox: for in many instances where, on subsequent exposure to infection, the disease has been taken, it has been found that the process of inflammation and suppuration on the arms had taken place and gone to a greater extent than in ordinary cases; that the symptomatic affections were clearly marked, and that even eruptions, though small, and seldom maturating, have appeared. But as the state of the arm was a secondary object in small-pox inoculation, our solicitude being directed to what appeared of far more consequence—the number of pustules,—I may not, perhaps, be able readily to obtain much information on this point.

I shall

I shall conclude this paper by observing, that although Vaccine Inoculation does not inflict a severe disease, but, on the contrary, produces a mild affection, scarcely meriting the term *Disease*, yet, nevertheless, the Inoculator should be extremely careful to obtain a just and clear conception of this important branch of medical science. He should not only be acquainted with the laws and agencies of the vaccine virus on the constitution, but with those of the variolous also, as they often interfere with each other.

A general knowledge of the subject is not sufficient to enable or to warrant a person to practise Vaccine Inoculation; he should possess a particular knowledge; and that which I would wish strongly to inculcate, as the great foundation of the whole, is an intimate acquaintance with the character of the true and genuine vaccine pustule. The spurious pustule would then be readily detected, whatever form it might assume, and errors known no more.

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